

## REMARKS

Applicants respectfully request reconsideration and allowance of the present application in view of the following remarks. Claims 33, 37-40, and 42-53 are pending in the application. Independent claim 33, for instance, is directed to a nonwoven composite material comprising a nonwoven material and an extruded film layer adhered to the nonwoven material. The extruded film layer is prepared from a blended composition that includes an unsaturated styrene-isoprene-styrene block copolymer having a melt flow rate that is less than 20 g/10 min., and a compatibilizer that includes a styrene-butadiene-styrene block copolymer having a melt flow rate of about 20 g/10 min. or more. The styrene-isoprene-styrene and styrene-butadiene-styrene block copolymers are present in the blended composition in a ratio of from about 1.5:1 to about 2.5:1.<sup>1</sup>

In the Office Action, independent claim 33 was rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent Application No. 2003/0125442 to Maris, et al. The Office Action indicates that Maris et al. discloses a block copolymer “a1” having a MFR of less than 20. The Office Action also indicates that Maris et al. discloses a second styrenic block copolymer “a2” and utilizes *In re Fitzgerald* in an attempt to shift the burden to Applicant to prove that Maris et al. fails to disclose Applicant’s claimed property – i.e., a styrene-butadiene-styrene block copolymer having a melt flow rate of about 20 g/10 min. or more.

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<sup>1</sup> As indicated above, Applicants have amended independent claim 33 to include the limitation that the styrene-isoprene-styrene and styrene-butadiene-styrene block copolymers are present in the blended composition in a ratio of from about 1.5:1 and about 2.5:1. This range encompasses the ratio set forth in previously presented dependent claim 42, and thus does not raise a new issue that would require additional searching.

In the prior amendment dated October 24, 2007, Applicants submitted evidence that each copolymer disclosed by Maris et al. for "a2" failed to meet the limitations of a melt flow rate of 20 g/10 min. or more. For Kraton® G-1652, the submitted evidence indicates that an MFR of 5 g/10 min was obtained at 230°C. The present application, however, indicates that Applicants' MFR's are measured at 200°C / 5 kg weight. (Appl. pg. 17, lines 17-18). Nevertheless, as the Examiner correctly notes in the Office Action, one would expect the MFR to be lower at lower temperatures, thus Kraton® G-1652 would have an MFR of less than the reported 5 g/10 min at 200°C. For Kraton® D-4271, the submitted evidence indicates that an MFR of 11 g/10 min was obtained at 200°C/5 kg, which are the conditions denoted in Applicants' specification. The evidence submitted for Kraton® D1101 and Kraton® D1102 did not disclose the test methods utilized to obtain the values of  $\leq 1$ g/10 min and 11 g/10 min respectively.

Applicants are submitting herewith in Appendix A additional evidence for Kraton® D1101 and Kraton® D1102 that discloses the test conditions. The MFR for Kraton® D1101 is 1 g/10 min at 200°C/5 kg and the MFR for Kraton®1102 is 6 g/10 min at 200°C/5 kg. As such, Applicants have met their burden of proof as the disclosed materials in Maris et al. for "a2" have MFRs that are considerably less than Applicants' claimed "20 g/10 min or more." Thus, Applicants respectfully request withdrawal of this rejection.

Independent claim 33 was also rejected in the Office Action under 35 U.S.C. § 103(a) as being unpatentable over Vaughan et al. (U.S. Patent No. 6,531,544). Vaughan et al., however, fails to disclose styrene-isoprene-styrene and styrene-butadiene-styrene block copolymers that are present in the blended composition in the

claimed ratio. In rejecting dependent claim 42, however, the Examiner states "it would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention to arrive at applicants combination by selecting from the disclosures of Vaughan absent any showing of surprising or unexpected results." Applicants urge that the claimed ratio of from about 1.5:1 to about 2.5:1 of styrene-isoprene-styrene and styrene-butadiene-styrene block copolymers in the blended composition is not merely an obvious design choice. As noted throughout the specification, while unsaturated block polymers have been frequently used in adhesive-type applications, the use of such polymers has presented significant manufacturing challenges in extrusion of film and filaments. The stability of the unsaturated block copolymers over the extended period of time required to extrude film and filaments is not predictable and often results in severe manufacturing disturbances. In Applicants' claimed ratios of SIS to SBS, a relatively flat viscosity line (*see, for example*, Fig. 3) was discovered, which is indicative of thermal stability in the extrusion process. The inventors discovered that the blended SIS and SBS polymer resins demonstrated a relatively constant viscosity, and exhibited an increased ability to withstand degradation in the extrusion process as the ratio of blended styrenic isoprene to styrenic butadiene approached the claimed ratios. Thus, for at least the reasons indicated, Applicants respectfully request withdrawal of this rejection.

Independent claim 33 was rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,358,783 to Diehl, et al. In Applicants prior amendment dated October 24, 2007, previous dependent claim 41 was incorporated into independent claim 33. Applicants

note that previous dependent claim 41 was not rejected in view of Diehl, et al. As correctly indicated in the prior Office Action, Diehl, et al. fails to disclose or suggest the use of styrene-butadiene-styrene block copolymers. As such, Applicants respectfully request withdrawal of this rejection.

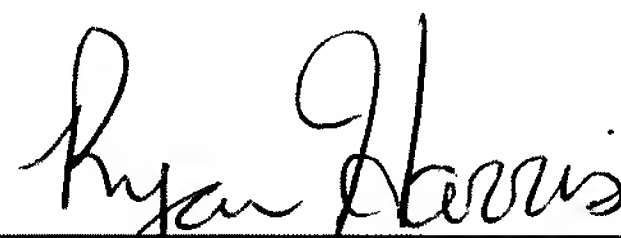
As such, independent claim 33 patentably defines over the references. Furthermore, Applicants respectfully submit that, at least for the reasons indicated above, the dependent claims 37-40 and 42-53 also patentably define over the reference(s) cited. The patentability of the dependent claims, however, certainly does not hinge on the patentability of the independent claims.

In summary, Applicants respectfully submit that the present application is in complete condition for allowance and favorable action, therefore, is respectfully requested. Examiner Mullis is invited and encouraged to telephone the undersigned, however, should any issues remain after consideration of this Amendment.

Please charge any additional fees required by this Amendment to Deposit Account No. 04-1403.

Respectfully requested,

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## **Appendix A**

- Kraton D1101 Technical Data
- Kraton D1102 Technical Data



# Prospector

[www.ides.com/prospector](http://www.ides.com/prospector)

Combined Data Sheet

Tuesday, January 29, 2008

## KRATON® D-1101

Kraton Polymers LLC - *Styrene Butadiene Styrene Block Copolymer*Unit System: English

### Actions

Legend (Open)



### General Information

#### Product Description

KRATONTM D-1101 Polymer is a clear linear block copolymer based on styrene and butadiene, with bound styrene of 31% mass.

#### General

Material Status	<ul style="list-style-type: none"> <li>Commercial: Active</li> </ul>
Availability	<ul style="list-style-type: none"> <li>Asia Pacific</li> <li>Europe</li> <li>North America</li> </ul>
Test Standards Available	<ul style="list-style-type: none"> <li>ASTM</li> <li>ISO</li> </ul>
Features	<ul style="list-style-type: none"> <li>Copolymer</li> </ul>
Uses	<ul style="list-style-type: none"> <li>Adhesives</li> <li>Coating Applications</li> <li>Footwear</li> <li>Sealants</li> </ul>
Appearance	<ul style="list-style-type: none"> <li>Clear</li> </ul>
Forms	<ul style="list-style-type: none"> <li>Pellets</li> </ul>
Processing Method	<ul style="list-style-type: none"> <li>Compression Molding</li> <li>Extrusion, Film</li> </ul>

### ASTM and ISO Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.940		ASTM D792
Density	0.938	g/cm <sup>3</sup>	ISO 1183
Bulk Factor	1.0		ASTM D1895
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	1.0	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	1.0	g/10 min	ISO 1133
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress at 300%	400	psi	ASTM D412
Tensile Stress at 300%	421	psi	ISO 37
Tensile Strength at Yield	4600	psi	ASTM D412
Tensile Stress at Yield	4790	psi	ISO 37
Elongation at Yield	880	%	ASTM D412
Tensile Strain at Break	880	%	ISO 37
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (A Scale)	69		ASTM D2240
Shore Hardness (Shore A, Extruded)	72		ISO 868

#### Additional Properties

The value listed as Density, ISO 1183, was tested in accordance with ISO 2781.

Solution Viscosity, BAM 922: 3000 to 5000cps

Antioxidant Content, BAM 929: 0.14%w

Styrene/Rubber ratio, No standard: 31/69%

Diblock Content, No standard: 16%

Polystyrene Content, BAM 919: 29 to 33%w

Volatile Matter, BAM 907: 0.7%w

Total Extractables, BAM 905: 1%w

Dust Content, BAM 908: 0.15 to 0.35%w





Tuesday, January 29, 2008

**KRATON® D-1102**  
Kraton Polymers LLC - *Styrene Butadiene Styrene Block Copolymer*

Unit System: English

Actions

Legend (Open)

General Information

Product Description		
KRATONTM D-1102 Polymer is a clear linear block copolymer based on styrene and butadiene, with bound styrene of 29.5% mass. KRATON D-1102 Polymer is used in formulating adhesives, sealants and coatings and as a modifier of polymers and bitumäen. It is also used in compounds for technical and footwear applications.		
General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	
Test Standards Available	• ASTM • ISO	
Bound Styrene (ASTM D5775)	• 29.5 %	
Features	• Copolymer	
Uses	• Adhesives • Footwear • Coating Applications • Sealants	
Appearance	• Clear	
Forms	• Pellets	
Processing Method	• Compression Molding • Film, Cast	

ASTM and ISO Properties <sup>1</sup>			
Physical	Nominal Value	Unit	Test Method
Density	0.938	g/cm³	ISO 1183
Bulk Factor	0.40		ASTM D1895
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	6.0	g/10 min	ISO 1133
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress at 300%	421	psi	ISO 37
Tensile Stress at Yield	4790	psi	ISO 37
Tensile Strain at Break	880	%	ISO 37
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore A, Compression Molded)	70		ISO 868
Fill Analysis	Nominal Value	Unit	Test Method
Apparent Viscosity	1.2	Pa·s	ASTM D3835

**Additional Properties**

The value listed as Density, ISO 1183, was tested in accordance with ISO 2781.  
Bound Styrene, KM03: 29.5%mass  
Volatile Matter, KM04: 0.3%mass  
Ash Content, ISO 247 B: 0.3 to 4%mass  
Total Extractables, KM05: 1%mass  
The value listed as Apparent Viscosity, ASTM D3835, was tested in accordance with BMS 0380.  
Antioxidant Content, KM08: 0.14%mass

**Notes**

<sup>1</sup> Typical properties: these are not to be construed as specifications.